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ABSTRACT

This packet contains materials for a professional development workshop series to prepare adult educators to design and implement instruction based on the SCANS skills, using a project-based approach to instruction. Session 1 is a full day, although facilitators may choose to make it two three-hour sessions. Session 2 is three and one-half hours. Contents for each session consist of these components: lists of handout and transparency masters; overview (objectives, time requirements, materials checklist, preparation checklist), outline for session, preparation for session, and facilitator's notes. Facilitator's notes for Session 1 cover these six topics: Introduction, Objectives, Agenda; Overview and Implications of the SCANS Reports; The Need for Workplace Collaboration in the 21st Century; Project-Based Instruction as a Vehicle for Learning and Practicing Collaborative SCANS Skills; Interim Project-Based Task for Participants; and Wrap-up of Session 1. Facilitator's notes for Session 2 focus on Overview of Session 2; Assessment and Evaluation of SCANS-Related, Project-Based Instruction and Learning; Team Completion of Lesson Plans and Planning for the Presentation; Presentation of Projects to the Whole Workshop Group; Brainstorming Uses of SCANS-Related, Project-Based Lessons; and Wrap-up of Session 2. (YLB)

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SCANS-Related, Project-Based Instruction and Learning in Adult Education

A Professional Development Packet

A Publication of Building Professional Development Partnerships for Adult Educators Project *(PRO-NET)*
Pelavin Research Institute of the American Institutes for Research

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Thanks also are extended to Margaret Kirkpatrick, Director, Staff Development Institute, (Funded by the California Department of Education, Youth, Adult and Alternative Educational Services Division) for sharing two staff development packets: *SCANS: Common Sense for the 21st Century* and *SCANS II: How to Manage a SCANS Classroom.* Some of those materials also have been adapted for this publication.

Note: Session 1 of this workshop series is a full day. (Facilitators may choose to make the first session two, three-hour sessions). Session 2 is three and one-half hours.

Availability of this professional development packet: ***SCANS-Related, Project-Based Instruction and Learning in Adult Education (Sessions 1 and 2 with interim activities).***

To obtain a copy of this professional development packet, go to www.AIR-DC.org/NRS and click on publications.

Contents for Session 1

	Page
Overview: SCANS-Related Professional Development—Session 1	iii
Objectives	iii
Time Requirements	iii
Materials Checklist	iii
Preparation Checklist	iii
Outline for Session 1	iv
Preparation for Session 1	v
Facilitator's Notes: Session 1	1
I. Introduction, Objectives, Agenda	1
II. Overview and Implications of the SCANS Reports	1
A. Overview	1
B. SCANS Jigsaw Activity	2
C. Implications of the SCANS Reports for Adult Education	3
III. The Need for Workplace Collaboration in the 21st Century	4
A. Collaboration as a SCANS Competency	4
B. Why Collaboration Is Important	5
C. Collaborative Activity	5
IV. Project-Based Instruction as a Vehicle for Learning and Practicing Collaborative SCANS Skills	7
A. What Is Project-Based Instruction and Learning? Brainstorm Activity	7
B. Team Roles	8
C. Project-Based Instruction and SCANS at Work (A Scenario)	9
V. Interim Project-Based Task for Participants	10
A. Team Roles	10
B. Planning for Instruction	11
C. Teaching the Lesson	11
VI. Wrap-up of Session 1	12

Handout Masters for Session 1

H-1	Objectives
H-2	Agenda
H-3	SCANS Publications
H-4	Workplace Know-How (Jigsaw Home Team Pre/Post-Test)
H-5	Instructions for Expert Groups
H-6a,b,c,	Expert Group Readings
H-7	Characteristics of Today's and Tomorrow's Schools
H-8	Collaborative Worksheet
H-9	Collaborative Task Observation Form
H-10a	Collaborative Construction Task
H-10b	Collaborative Logical Thinking Task
H-11a,b	Project-Based Instruction
H-12	Steps of Project-Based Instruction
H-13	Examples of Team Functions by Team Members
H-14	Scenario (SCANS Project-Based Scenario)
H-15	Examples of the SCANS Competencies, Skills, and Personal Qualities from the Scenario
H-16	Project-Based Team Roles
H-17a,b,c	Steps in Designing and Implementing A Project-Based Sequence
H-18a,b,c	Lesson Plan Project Form
H-19	Summary of Lesson Taught

Transparency Masters for Session 1

T-A	Objectives
T-B	Agenda
T-C	SCANS Publications
T-D	The Two Most Common Goals of Adult Education Students
T-E	Characteristics of Today's and Tomorrow's Schools
T-F	SCANS Competency #2: Interpersonal—Works with Others
T-G	Solution to Logical Thinking Collaborative Task
T-H	Steps of Project-Based Instruction
T-I	Project-Based Team Roles
T-J	Lesson Plan Project Form
T-K	Summary of Lesson Taught

Appendices

A	Assessment Questionnaire
B	SCANS-Related, Project-Based Instruction and Learning Evaluation of Workshop Series
C	SCANS Competencies and Three-Part Foundation
D	References

Overview: SCANS-Related Professional Development—Session 1

Objectives: By the end of this session, participants will be able to:

1. Identify SCANS Workplace Competencies and foundation skills, including personal qualities
2. Plan and participate in collaborative activities
3. Identify the characteristics of project-based instruction
4. Integrate SCANS-related content, collaborative activities, and project-based instruction into a lesson plan

Time Requirements: [1]

Total time required for Session 1 is approximately 6 hours

Materials Checklist: Y

Hardware:
___ Overhead projector, screen and flip-chart stand (if used)

Software:
___ Session 1 Handouts
___ Session 1 Transparencies
___ Blank transparencies and transparency pens
___ Flip charts, pens, masking tape, and name tags
___ Packets for collaborative construction task, if used
___ (5-5x8 cards; 5-3x5 cards; 10 paper clips)

Preparation Checklist: Y

___ Duplicate handouts
___ Check equipment to be sure it is working properly
___ Set-up the room(s) where training activities will take place[2]

[1]Regarding suggested times: All suggested times are the result of field-testing. Agencies should feel free to adjust the suggested times to meet the needs and experience levels of the participants. In addition, it is important to be familiar with the materials prior to the workshop in order to select specific activities to present or delete if sufficient time is not available or some activities take longer than anticipated. Familiarity with the materials also will enable presenters to personalize the materials by adding anecdotes when appropriate.

[2]Regarding room setup: Training activities include both large and small groups. Therefore, the room should be arranged so participants can move about easily. Try to make certain that all participants can see flip charts, overheads, or videos.

Outline for Session 1

Materials	Activities	Estimated Time
H-1; H-2 T-A; T-B	I. Introduction, Objectives, Agenda	30 minutes
H-3; H-4; H-5; H-6a,b,c; H-7; T-C; T-D; T-E	II. Overview and Implications of the SCANS Reports	75 minutes
	Break	15 minutes
H-4; H-8; H-9; H-10a,b T-F, T-G	III. The Need for Workplace Collaboration in the 21st Century	45 minutes
	Lunch	60 minutes
H-4; H-11; H-12; H-13; H-14; H-15; T-H	IV. Project-Based Instruction as a Vehicle for Learning and Practicing Collaborative SCANS Skills	60 minutes
H-16; H-17; H-18; H-19; T-I, T-J	V. Interim Project-Based Task for Participants	60 minutes (includes break)
H-18; H-17	VI. Wrap-Up of Session 1	15 minutes
	Total Time Required	6 hours

Preparation for Session 1

Send out flyers announcing the professional development series. Stress that participants are expected to attend both sessions and participate in an interim activity between sessions. Send out any needs assessments, questionnaires, or other advance materials. (See Appendix A for a sample needs assessment.)

Run-off handouts from Handout Masters (H-1 through H-19).

Make transparencies from Transparency Masters (T-A through T-K).

Analyze results of any needs assessments or questionnaires previously sent out. It may be appropriate to make transparencies or handouts summarizing participant data.

Order all equipment (e.g. overhead projector, screen, and flip-chart stands) and make sure they are operating correctly. Also check screen for size and clarity of print from a distance.

Have available such materials as flip charts, pens, masking tape, blank transparencies, name tags, and materials for the collaborative construction task (if used).

Arrange for a place to hold Session 1 and make sure the location has sufficient space and movable chairs for breakout activities. Consider which room arrangement style will best suit communication and activities. Try to make certain all participants will be able to see the flip charts, overheads, or videos that will be used during the activities.

Arrange for participant parking, if necessary, and for any refreshments that will be made available.

Review the SCANS-Related Professional Development Packet including all handout and transparency masters. Give special attention to the Facilitator's Notes.

Facilitator's Notes: Session 1

		Minutes
	I. Introduction, Objectives, Agenda	30 minutes
	A. If participants do not all know one another, take time to do the following: Ask each participant to find a person he/she doesn't know. Each person will ask the other for two pieces of information:	20 minutes
	1. Name, agency, and position; and 2. What they hope to gain from this workshop. After gaining the information, each participant will introduce the person he/she interviewed.	
	B. If participants are already acquainted, ask a series of general questions such as:	
	1. How many are instructors? Administrators? Other? 2. How many have been in adult education less than 3 years? 5 to 10 years? Over 10?	
	C. Facilitators should introduce themselves, providing only information pertinent to their roles as facilitators of this SCANS packet.	5 minutes
H-1; H-2 T-A; T-B	D. Using T-A and H-1 (Objectives), quickly note the purpose and objectives for Session I. Follow with T-B and H-2 (Agenda) and briefly summarize the day's activities and their relationship to the agenda.	5 minutes
	Note: The purpose of these sessions is to prepare adult educators to design and implement instruction that is based on the SCANS skills, using a project-based approach to instruction.	
	II. Overview and Implications of the SCANS Reports	
	A. Overview: Ask if there are any participants who are already familiar with the two SCANS reports for America 2000?	5 minutes
	If yes:	
	1. Ask them to identify the acronym SCANS: Secretary's Commission on Achieving Necessary Skills. 2. Ask also the source of the reports: The U.S. Department of Labor. 3. Ask if anyone can identify the titles of the 2 reports: "Learning a Living: What Work Requires of Schools." (June '91) and "Learning a Living: A Blueprint for High Performance." (July '92). Show T-C and refer to H-3 to	
H-3;T-C	reinforce this information.	

SCANS

Secretary's Commission On Achieving Necessary Skills

Two Reports Published By: U.S. Department of Labor

1. Learning A Living: What Work Requires of Schools (June 1991)
2. Learning a Living: A Blueprint for High Performance (July 1992)

If no participant is knowledgeable about SCANS, show T-C, refer to H-3 and, explain the above boxed information.

H-4

B. SCANS Jigsaw Activity: Form Home Teams of 6 (or as near as possible to 6). Each Home Team has a blank chart H-4 (SCANS Workplace Know-How) as a pre/post-test for the Home Teams. Allow 5 minutes or less for the Home Team (as a team) to complete the pre-test column on H-4. Tell them to keep H-4 until the end of the exercise. Participants will next form small expert groups and count-off by letters: "A", "B", and "C". All "A"s will move to one expert group, all "B"s to another, and "C"s to the final group. 60 minutes

H-5, H-6a,b,c

Once in their expert groups, all participants will refer to H-5 (Instructions for Expert Groups) and follow it carefully. It instructs each group to refer to their respective readings: Group A will read H-6a; Group B, H-6b; and Group C, H-6c. In a jigsaw, each member of the expert team returns to his/her home team for another activity. The jigsaw variation in this exercise is that instead of each expert member returning to his/her home team and teaching, the experts will remain in their groups and teach everyone as a large group (so they may use the overhead projector). Following the expert presentations, each letter person will return to his/her home team and help complete the post-test.

Note: Transparency masters on the SCANS competencies and foundation are available in Appendix "C", should expert group B or C wish to use them in their presentations.

H-4

After each expert group has made their presentation to the whole group, they will return to their Home Teams and complete the post-test column on H-4 (Workplace Know-How).

Facilitators should get brief feedback from the Home Teams to verify that they were all able to complete the H-4 post test.

C. Implications of the SCANS Reports for Adult Education (A brief presentation using a series of transparencies.) — 10 minutes

For this exercise, it is not necessary to write participant answers on overhead transparencies or flip chart. Simply elicit responses then show the related transparency, as indicated.

T-D

1. Ask participants if they can identify the 2 most common goals of adult education students? (T- D)

   (i) To get a job/better job or promotion and
   (ii) To improve basic skills

H-7; T-E

2. Show chart (H- 7)(T- E) that compares Schools of Today with Schools of Tomorrow. (seen previously as part of the reading for Expert Group "C"). Explain Workplace Investment Act (WIA) relationships to adult instruction as follows:

   Local providers of adult education that receive funds under the Workforce Investment Act, must use these funds in one or more of three broad categories: (1) adult education and literacy services, including workplace literacy services, (2) family literacy services, and (3) English literacy programs. In addition, WIA requires states to consider several elements in awarding grants or contracts to providers including the following:

   - Real Life Context: Whether the activities provide learning in a real-life context to ensure that the individual has the skills necessary to compete in the workplace and exercise the rights and responsibilities of citizenship.
   - Effective Practice: Whether the activities are built on a strong foundation of research and effective educational practice.

H-7

Ask participants to think about where their instruction lies in relation to the chart on H- 7. (Participants should not be asked to respond, just to think about their own teaching.)

3. Suggest that the SCANS skills can be used in a couple of ways:

   i. On a limited or periodic basis to enhance traditional ABE curriculum, or
   ii. In a more comprehensive and intensive approach whereby the primary focus of instruction is to achieve proficiency in the SCANS skills.

Break — 15 minutes

III. The Need for Workplace Collaboration in the 21st Century — 45 minutes

A. Collaboration as a SCANS Competency — 5 minutes

Point out to participants that America is becoming an increasingly collaborative society. For example, families are less autocratic; schools enjoy more *facilitated, authentic (materials and examples drawn from real-life experiences), and team-oriented* learning than rote learning. The SCANS Report indicates that business and industry are increasingly team-oriented at every level.

H-4

1. Ask participants which SCANS competency emphasizes the need for collaboration in the workplace. (They can continue to refer to H-4: Workplace Know-How.)

T-F

(Show T- F) Competency #2: Interpersonal: Works With Others. Includes A. *Participates as Member of a Team* – contributes to group effort, E. *Negotiates*—works toward agreements involving exchange of resources, resolves divergent interests and F. *Works with Diversity*—works well with men and women from diverse backgrounds.

2. Relate an anecdote that illustrates the importance of collaboration in the workplace. If facilitators don't have one of their own, they might use the illustration in the box below.

Minutes

A college student from Africa who was studying in business administration 3 nights a week, was hired by a local bank in the International Trusts Department. At the end of each day, employees left when their work was finished. This was not the way the African student was raised, so he always stayed and helped his fellow workers until everyone was finished. They often told him he didn't have to do that but he did anyway.

Later, when the bank merged with a larger bank, only one employee from the International Trust Department could be transferred to the new bank's operations. Which employee do you think was transferred to the new bank? Yes, the African student. Why? Because he was the only employee who knew all of the jobs in the department.

B. Why Collaboration Is Important (Form small groups of 3 to 5. Groups may be formed randomly, or they may be based on content taught: ABE, ESL, and GED/ASE.) 20 minutes

H-8

Using the Collaborative Worksheet (H-8), have participants complete the following tasks:

1. List some of the ways that collaboration has been used in this workshop thus far.
2. Cite ways that collaboration is presently being used in ABE/ESL/GED/ASE classrooms.
3. Recall incidents where collaboration was a "key" to success in their own work life. (Remind them of the anecdote already mentioned.) Have group select one incident to report.

C. Collaborative Activity 20 minutes

H-9
H-10a
H-10b

T-G

H-10a and H-10b present two possible collaborative tasks to point-up some of the benefits of collaborative planning and task achievement. The facilitator can select either task or, if the participants are many, divide the groups so that at least two (and preferably three) groups complete each task. Answers for the Logical Thinking Task (H-10b) can be found on T-G and in the box below.

An observer is appointed for each group and is given an observation form (H-9) to record:

1. Time in planning and in executing the activity.
2. Observations on the process each group followed.

Collaborative Construction Task: (H-10a) Your group's collaborative task is to construct the tallest possible Free-Standing tower. Only the materials provided can be used. (Adding extraneous materials such as tape or other objects will disqualify your group's project.)

The product is expected to be a collaborative team effort! You will have 15 minutes total to complete your group task. You may divide your time any way you wish between planning and building.

An observer will report on your team's efforts. The materials in your packet are: Five 5x8 cards—Five 3x5 cards—Ten paper clips.

Collaborative Logical Thinking Task: (H-10b) The CEO of a large manufacturing company called a team meeting of his 5 top managers. The names of the CEO and the 5 managers who sat down at the circular table were: Mr. Airhead, Ms. Alliance, Mr. Hussel, Mr. Dupont, Ms. Antrophy, and Mr. Fish. One of them was deaf, one was very talkative, one was a snob, one simply hated Mr. Dupont, one had a vitamin deficiency, and one was the CEO. The following information is available:

- The person who hated Mr. Dupont sat directly opposite from Ms. Alliance.
- The deaf person sat opposite Mr. Hussel, who sat between the person who had a vitamin deficiency and the person who hated Mr. Dupont.
- The person who had a vitamin deficiency sat between Mr. Hussel and the person who sat opposite from the woman who hated Mr. Dupont.
- Mr. Fish, who was a good friend of everyone, sat next to the snob and opposite the CEO.

Minutes

As a collaborative team, identify each of the team members using the following list:

Fill in the number of the correct person for each characteristic. (The correct answers for H-10b are indicated below.)

1. Mr. Airhead __6___ Deaf
2. Ms. Alliance __2___ Talkative
3. Mr. Hussel __4___ Snob
4. Mr. Dupont __5___ Hated Mr. Dupont
5. Ms. Anthrophy __1___ Vitamin Deficiency
6. Mr. Fish __3___ CEO

The process for making this decision can be seen in T-G.

T-G

The observer for each group reports the information from their recording sheets (H-9) to the whole group (without identifying individuals). The information from the most successful group is compared with others. The importance of building team identity and team spirit is also discussed.

Lunch 60 minutes

IV. Project-Based Instruction as a Vehicle for Learning and Practicing Collaborative SCANS Skills 60 minutes

A. What Is Project-Based Instruction and Learning? Brainstorm Activity 20 minutes

H-11

Place participants in pairs or triads. Ask them first to read independently, H-11 (2-page discussion of Project-Based Instruction).

Pairs or triads next brainstorm (for about 5 minutes) workplace-related projects that could be completed in an ABE/ESL or GED/ASE classroom. They record their list. How pairs/triads are combined depends on the teaching areas of participants. For example, they may be all ESL or represent all 4 areas noted.

The facilitator gets feedback and lists ideas on a flip chart or transparency. Participants are encouraged to copy any topics they might want to use in their own classrooms. If topics are few (or as a "starter") the facilitator may want to use some of the examples from the following box.

Minutes

Examples of Project-Based Learning

- Starting your own small business (negotiating space, setting budgets, hiring employees, getting supplies)
- Organizing a community action activity to improve worker's health benefits (researching the issue, soliciting support from community members, identifying and assigning tasks, delivering the message)
- Developing a handbook for employees new to the company (identifying and organizing information, estimating costs, publishing materials)

Presentation

Project-Based instruction requires that teams work together to complete a project.

H-12
T-H

Whereas topics may vary, projects generally include the following steps. (Refer to H-12 and show T- H, Steps of Project-Based Instruction.)

1. Identifying a problem or issue
2. Carrying out preliminary investigations
3. Planning and assigning tasks
4. Providing instruction to enable learners to carry out the research and activities
5. Researching the topic
6. Implementing the project
7. Developing and drafting a final product
8. Assessing and evaluating the process and product
9. Disseminating the results

B. Team Roles — 10 minutes

Ask participants to use the activities and discussion from this workshop as well as their own experiences, to identify some of the roles that team members assume to ensure that teams accomplish their tasks successfully.

Responses from the group may include the following roles: Leader, Time-Manager, Recorder, Presenter, Resource Person, Negotiator, Clarifier etc.

Minutes

Tell participants that it is often easy to confuse "roles" with the "tasks or functions" that team members perform. Sometimes these functions are the same as a role. The difference is that roles are more "established" and long-term, whereas a "function" may emerge only for a few minutes.

For example, a team member may take over the leadership role in order to get agreement on an idea that he/she has presented. Or a team member may negotiate acceptance of a task that he/she wants to assume even if he/she wasn't appointed as the team negotiator.

H-13 An example of team functions can be seen on H-13 and in the box below:

Examples of Team Functions By Team Members

1. Participates as a team member:
   - Helps others
   - Respects diversity (doesn't put others down)
   - Expresses ideas clearly and asks for clarification when doesn't understand
   - Accepts team responsibilities
   - Gives and accepts constructive feedback
2. Exercises leadership:
   - Restates and summarizes to keep discussion on track
   - Suggests approaches
   - Helps delegate tasks
   - Suggests organizational structures and roles
3. Negotiates to arrive at decisions:
   - Makes his/her position clear without being authoritative
   - Is willing to compromise for the good of the whole
   - Offers alternatives when decisions are difficult
   - Suggests criteria for decisions and solutions to barriers

H-4; H-14; H-15 **C. Project-Based Instruction and SCANS at Work (A Scenario)** 30 minutes

Participants can be re-grouped into pairs/triads or they can remain in the brainstorming groups for this activity. Ask participants to read the scenario (H-14) independently, then, using H-4 (Workplace Know-How post-test), ask them to list on H-15, examples from the scenario where SCANS Workplace Competencies and Foundation Skills (basic skills, thinking skills and personal qualities) were used.

Minutes

Next, using a round-robin technique, the facilitator elicits examples from the pairs/triads. (It is NOT necessary for the facilitator to record these examples.)

V. Interim Project-Based Task for Participants — 60 minutes

Inform participants that they will be asked to complete a project as part of their assignment for Session 2 of this workshop series. Tell them the project will be designing a project-based lesson for their students. Explain that today they will focus on:

(1)Forming collaborative teams;

(2)Selecting topics for each team's project-based instruction; and

(3)Beginning to plan those tasks that need to be accomplished during the interim between workshop sessions.

A. Team Roles

H-16; T-1

Because they will be working in teams, possibly at different sites, we would suggest that teams consider identifying persons to assume at least the following roles: Turn to H-16 and show T-I, (Project-Based Team Roles) which can also be seen in the following box:

Project-Based Team Roles

Coordinator: Makes sure team members keep in touch, are on-task and on time.

Resource Manager: Assumes the responsibility for making sure resources are secured or developed.

Recorder: Keeps a record of team plans; prepares a final copy of the lesson during Session 2 to be presented as a handout or on a transparency.

Presenter: Makes the final presentation of the SCANS-related, project-based lesson to the workshop participants.

* * * * * * * * * *

Note: Ideally, roles are assumed by different team members; however, in some instances, more than one role can be assumed by the same person.

Ask participants if there are other roles they would recommend for a project that involves designing and presenting a lesson plan. Allow a brief time for discussion of these roles and be flexible in altering or adding to them.

		Minutes
	B. Planning for Instruction Tell participants they will have a 10-minute break during which they should select persons to team up with to design a project-based lesson. Remind participants that team members will need to communicate during the interim—by phone, fax, e-mail, or in person. Therefore, they should construct teams that are manageable in number, and compatible in personal qualities and populations served.	
H-19; T-K	C. Teaching the Lesson If there is sufficient time between Session 1 and Session 2 participants should be asked to try out their lesson with adult students. During the reports in Session 2, after the lesson itself has been presented, each team should summarize the results from teaching that lesson. H-19 and T-K (Summary of Lesson Taught) can be used for recording team findings as well as for an outline of the presentation.	
	Break	10 minutes
H-17; H-18; T-J	Ask participants to sit as teams when they return from their break. Check to see if anyone is without a team. If so, make sure that everyone is situated and comfortable in a team. Ask teams to turn to H-17 (Steps in Designing & Implementing a Project-Based SCANS-Related Instructional Sequence) and H-18 (Lesson Plan Project). For the remainder of this workshop until "Wrap-Up" time, they will work as teams in planning their lesson project. Show T-J (Lesson Plan Project Form). Briefly explain the columns and rows and suggest they use this to record their lesson. They will be handed 2 copies of the Steps in Designing (H-17), one to be used as a guide and one to be handed to the workshop facilitator at the end of the day indicating which steps have been completed. Tell participants if they discover that their student populations are very different in levels or composition or for other reasons, they still may reformulate their teams but should do so as soon as possible, so that the planning tasks can be accomplished.	

Minutes

VI. Wrap-up of Session 1 — 15 minutes

Remind participants what will happen at Session 2 of the workshop series:

A. Presentation and activities dedicated to evaluating project-based instruction—including the use of rubrics.

B. An opportunity to complete, or revise (if lesson was taught) the lesson-plan projects. (Therefore any needed resources should be brought to Session 2.)

H-18

C. A presentation to the whole group of each team's completed project. Preferably, the Lesson Plan project Form (H-18) will be used for the presentation. If participants find that chart to be inadequate, they should at least use the same readings and sequence in order to make it easier for other participants to follow along and adapt for their own uses.

Note: Although there will be about an hour devoted to project completion and preparation for presentations during Session 2, invite participants to think about their presentations before coming and to bring any visuals that may be difficult to construct at the workshop (e.g. special transparencies or flip-charts). There will be blank transparencies available and a limited number of transparency pens; so if participants want to bring additional pens or other items for their use, it may prove helpful to them.

Whole-group discussion of problems and recommendations for making projects successful.

H-17

Each team hands in a copy of their Steps in Designing and Implementing a Project-Based Sequence. (H-17).

Remind participants that there will be an evaluation of the workshop series at the end of Session 2.

Thank participants for their enthusiasm and willingness to participate fully in activities and wish them well on their project efforts during the interim.

End of Session 1

Handout Masters For Session 1

Session 1: Objectives

By the end of this session, participants will be able to:

1. Identify SCANS competencies and the foundation skills and personal qualities

2. Plan and participate in collaborative activities

3. Identify the characteristics of project-based instruction and learning

4. Integrate SCANS-related content, collaborative activities, and project-based instruction into a lesson plan

Session 1: Agenda

I. Introduction, Objectives, Agenda

II. Overview and Implications of the SCANS Reports

III. The Need for Workplace Collaboration in the 21st Century

IV. Project-Based Instruction as a Vehicle for Learning and Practicing Collaborative SCANS Skills

V. Interim Project-Based Task for Participants

VI. Wrap-up of Session 1

SCANS Publications

SCANS

Secretary's Commission On Achieving Necessary Skills

Two Reports Published By: U.S. Department of Labor

1. *Learning A Living: What Work Requires of Schools (June 1991)*
2. *Learning a Living: A Blueprint for High Performance (July 1992)*

Jigsaw Home Team Pre/Post-Test

Workplace Know-How

The know-how identified by SCANS is made up of 5 competencies and three foundation skills needed for solid job performance. These include:

Pre-Test Competencies	Post-Test Competency includes these skills:
1.	
2.	
3.	
4.	
5.	
Foundation Skills	**Foundation competencies include:**
1.	
2.	
3.	

H-4

Instructions for Expert Groups

1. Read individually, the following (Estimated at 10 min. each):

   Members of Group "A": Background , Need and Overview (H-6a)

   Members of Group "B": The Five Competencies (H-6b)

   Members of Group "C": Foundation Skills (H-6c)

2. As a group, decide on the most important points that you need to teach other workshop participants in the 5 minutes you will have to teach. (10 minutes estimated to select points)

3. Decide what instructional strategies would be most effective for teaching those points. You may select individuals to do the teaching or some form of team-or-group teaching. (10 minutes for choosing strategies and constructing any devices necessary—e.g., flip chart, cards, transparency, etc.) Try to find a way to make your 5-minute lesson creative and interesting so team members will remember the contents.

(Note: Total teaching time of 3 expert groups = 15 minutes. Please select a time-keeper from each group to keep tasks 1, 2, and 3 above, and your teaching on time.)

SCANS Jigsaw Reading: Expert Group "A"

Background, Need and Overview

A strong back, the willingness to work, and a high school diploma were once all that was needed to make a start in America. They are no longer. A well-developed mind, a passion to learn, and the ability to put knowledge to work are the new keys to the future of our learners, the success of our businesses, and the economic well-being of the nation.

Two conditions that arose in the last quarter of the 20th Century have changed the terms for entry into the world of work: the globalization of commerce and industry and the explosive growth of technology on the job. These developments have barely been reflected in how we prepare people for work or in how many of our workplaces are organized. Schools need to do a better job and so do employers. Students and workers must work smarter. Unless they do, neither our schools, our students, nor our businesses can prosper.

In 1975, the plans for a personal computer appeared in a popular scientific magazine. That device has altered the speed with which work is done and its very nature. It has created not only a new industry; it has redefined the ways "work" is now carried out. The promise of a global economic environment and a workplace grounded in technology is dramatic.

The Secretary's Commission on Achieving Necessary Skills (SCANS) was asked to examine the demands of the workplace and whether people are capable of meeting those demands. Specifically, the commission was directed to advise the Secretary on the level of skills required to enter employment. In carrying out this charge, the Commission was asked to:

- Define the skills needed for employment;
- Propose acceptable levels of proficiency; and
- Develop a dissemination strategy for the nation's schools, businesses, and homes.

This report resulted from discussions and meetings with business owners, public employers, unions, and workers and supervisors in shops, plants, and stores. It builds on the work of six special panels established to examine all manner of jobs from manufacturing to government employment. Researchers were also commissioned to conduct lengthy interviews with workers in a wide range of jobs.

The message was universal: good jobs will increasingly depend on people who can put knowledge to work. The findings were disturbing: more than half leave school without the knowledge or foundation required to find and keep a good job. They will pay a very high price: the bleak prospects of dead-end work interrupted only by periods of unemployment.

Characteristics of Today's and Tomorrow's Workplace [1]

Traditional Model	High Performance Model
Strategy	
• Mass production • Long production runs • Centralized control	• Flexible production • Customized production • Decentralized control
Production	
• Fixed automation • End-of-line quality control • Fragmentation of tasks • Authority vested in supervisor	• Flexible automation • On-line quality control • Work teams, multi-skilled workers • Authority delegated to worker
Hiring and Human Resources	
• Labor-management confrontation • Minimal qualifications accepted • Workers as a cost	• Labor-management cooperation • Screening for basic skills abilities • Workforce as an investment
Job Ladders	
• Internal labor market • Advancement by seniority	• Limited internal labor market • Advancement by certified skills
Training	
• Minimal for production workers • Specialized for craft workers	• Training sessions for everyone • Broader skills sought

SCANS research verifies that what we call *workplace know-how* defines effective job performance today. This know-how has two elements: *competencies* and a *foundation*. This report identifies five competencies and a three-part foundation of skills and personal qualities that lie at the heart of job performance. These eight requirements are essential preparation for all students—those going directly to work and those planning further education. Thus, the competencies and the foundation should be taught and understood in an integrated fashion that reflects the workplace *contexts* in which they are applied.

Five Competencies	
1. Resources	4. Systems
2. Interpersonal	5. Technology
3. Information	
A Three-Part Foundation	
1. Basic Skills	3. Personal Qualities
2. Thinking Skills	

Expert Groups "B" and "C" will explore the competencies and foundation in greater depth.

[1]Source: "Competing in the New International Economy." Washington: Office of Technology Assessment, 1990.

SCANS Jigsaw Reading: Expert Group "B"

The Five Competencies

The five SCANS competencies span the chasm between school and the workplace. They are needed in workplaces dedicated to excellence, and are the hallmarks of today's expert worker. Implementing the SCANS competencies in the workplace is vital to offering quality products and services in today's market.

The competencies differ from a person's technical knowledge. For example, both engineers and accountants manage resources, information, systems, and technology. They require competence in these areas even though building a bridge has little to do with balancing a set of books. But in each profession, the competencies are at least as important as technical expertise. The members of the SCANS Commission believe these competencies are applicable from the shop floor to the executive suite. In the broadest sense, the competencies represent the attributes that today's high-performance employer seeks in tomorrow's employee.

Five Competencies
Resources: Identifies, organizes, plans, and allocates resources A. *Time*—Selects goal-relevant activities, ranks them, allocates time, and prepares and follows schedules B. *Money*—Uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives C. *Material and Facilities*—Acquires, stores, allocates, and uses materials or space efficiently D. *Human Resources*—Assesses skills and distributes work accordingly, evaluates performance, and provides feedback
Interpersonal: Works with others A. *Participates as Member of a Team*—contributes to group effort B. *Teaches Others New Skills* C. *Serves Clients/Customers*—works to satisfy customer's expectations D. *Exercises Leadership*—communicates ideas to justify position, persuades and convinces others, and challenges existing procedures and policies E. *Negotiates*—works toward agreements involving exchange of resources, and resolves divergent interests F. *Works with Diversity*—works well with men and women from diverse backgrounds
Information: Acquires and uses information A. *Acquires and Evaluates Information* B. *Organizes and Maintains Information* C. *Interprets and Communicates Information* D. *Uses Computers to Process Information*
Systems: Understands complex inter-relationships A. *Understands Systems*—knows how social, organizational, and technology systems work and operates effectively with them B. *Monitors and Corrects Performance*—distinguishes trends, predicts impacts on system operations, diagnoses deviations in systems' performance, and corrects malfunctions C. *Improves or Designs Systems*—suggests modifications to existing systems and develops new or alternative systems to improve performance
Technology: Works with a variety of technologies A. *Selects Technology*—chooses procedures, tools or equipment including computers and related technologies B. *Applies Technology to Tasks*—Understands overall intent and proper procedures for setup and operation of equipment C. *Maintains and Troubleshoots Equipment*—Prevents, identifies, or solves problems with equipment, including computers and other technologies

Defining the minimum levels of proficiency in the SCANS competencies is also a crucial part of the Commission's task. It requires (1) making judgments about possible school-based learning related to SCANS, (2) imagining what the future workplaces will look like, and (3) determining what learning should take place there.

The minimums proposed would define what makes a person ready for work at entry levels on career ladders. They represent neither the first nor last steps in a process of life-long learning. Instead, the minimums will be a second step in a progression of skills acquisition. For example, consider scheduling time, part of the SCANS resources competency: A learner (at the preparatory stage) might be expected to make a schedule for him or herself. Being *work-ready* would require making a schedule for others. At the extreme, a specialist might develop schedules for an airline. The proficiency scale might look as follows:

Proficiency Level	Performance Benchmark
Preparatory	Scheduling oneself
Work-ready	Scheduling a small work team
Intermediate	Scheduling a production line or substantial construction project
Advanced	Developing a roll-out schedule for a new product or production plan
Specialist	Developing an algorithm for scheduling an airline

Workforce know–how will be part of new World Class Standards. However, defining competencies and a foundation is not enough. Schools must teach them.

SCANS Jigsaw Reading: Expert Group "C"

Foundation Skills

Work involves a complex interplay among the five competencies and the three elements of the foundation—the basic skills, higher order thinking skills, and diligent application of personal qualities. Tomorrow's career ladders require even the basic skills—the old 3 Rs—to take on a new meaning. First, all employees will have to read well enough to understand and interpret diagrams, directories, correspondence, manuals, records, charts, graphs, tables, and specifications. Without the ability to read a diverse set of materials, workers cannot locate the descriptive and quantitative information needed to make decisions or to recommend courses of action. What do these reading requirements mean on the job? They might involve:

- Interpreting blueprints and materials catalogues;
- Dealing with letters and written policy on complaints;
- Reading patients' medical records and medication instructions; and
- Reading the text of technical manuals from equipment vendors.

At the same time, most jobs will call for writing skills to prepare correspondence, instructions, charts, graphs, and proposals, in order to make requests, explain, illustrate, and convince. On the job this might require:

- Writing memoranda to justify resources or explain plans;
- Preparing instructions for operating simple machines;
- Developing a narrative to explain graphs or tables; and
- Drafting suggested modifications in company procedures.

Mathematics and computational skills also will be essential. Virtually all employees will be required to maintain records, estimate results, use spreadsheets, or apply statistical process control as they negotiate, identify trends, or suggest new courses of action. Most of us will not leave our mathematics behind us in school. Instead, we will find ourselves using it on the job to:

- Reconcile differences between inventory and financial records;
- Estimate discounts on the spot while negotiating sales;
- Use spreadsheet programs to monitor expenditures;
- Employ statistical process control procedures to check quality; and
- Project resource needs over the next planning period.

Finally, very few of us will work totally by ourselves. More and more, work involves listening carefully to clients and co-workers and clearly articulating one's own point of view. Today's workers have to listen and speak well enough to explain schedules and procedures, communicate with customers, work in teams, understand customer concerns, describe complex systems and procedures, probe for hidden meaning, teach others, and solve problems. On the job, these skills may translate readily into:

- Training new workers or explaining new schedules to a work team;
- Describing plans to supervisors or clients;
- Questioning customers to diagnose malfunctions; and
- Answering questions from customers about post-sales service.

SCANS estimates that less than half of all young adults have achieved these reading and writing minimums; even fewer can handle the mathematics; and, schools today only indirectly address listening and speaking skills.

A Three-Part Foundation
Basic Skills: Reads, writes, performs arithmetic and mathematical operations, listens and speaks A. *Reading*—locates, understands, and interprets written information in prose and in documents such as manuals, graphics, and schedules B. *Writing*—communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts C. *Arithmetic/Mathematics*—performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques D. *Listening*—receives, attends to, interprets, and responds to verbal messages and other cues E. *Speaking*—organizes ideas and communicates orally
Thinking Skills: Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn, and reasons A. *Creative Thinking*—generates new ideas B. *Decision Making*—specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative C. *Problem Solving*—recognizes problems and devises and implements plan of action D. *Seeing Things in the Mind's Eye*—organizes and processes symbols, pictures, graphs, objectives, and other information E. *Knowing How to Learn*—uses efficient learning techniques to acquire and apply new knowledge and skills F. *Reasoning*—discovers a rule or principle underlying the relationships between two or more objectives and applies it when solving a problem
Personal Qualities: Displays responsibility, self-esteem, sociability, self-management, integrity, and honesty A. *Responsibility*—exerts a high level of effort and perseveres towards goal attainment B. *Self-Esteem*—believes in own self-worth and maintains a positive view of self C. *Sociability*—demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings *D. Self-Management*—assesses self accurately, sets personal goals, monitors progress, and exhibits self-control *E. Integrity/Honesty*—chooses ethical courses of action

SCANS believes that teachers and schools must begin early to help learners of any age see that what they study can be applied in real-world contexts. The foundations are best learned in the context of the competencies they support. Just as our workplaces are being reshaped, so too are our schools. Look, for example, at the projected characteristics of today's and tomorrow's schools.

Characteristics of Today's and Tomorrow's Schools

Schools of Today	Schools of Tomorrow
Strategy	
• Focus on development of basic skills • Testing separate from teaching	• Focus on development of thinking skills • Assessment integral to teaching
Learning Environment	
• Recitation and recall from short-term memory • Students work as individuals • Hierarchically sequenced—basics before higher order	• Students actively construct knowledge for themselves • Cooperative problem solving • Skills learned in context of real problems
Management	
• Supervision by administration	• Learner-centered, teacher directed
Outcome	
• Only some students learn to think	• All students learn to think

What Work Requires of Schools, a *SCANS report for America 2000,* speaks of a public-private partnership to "establish job-related skills standards built around core proficiencies."

Characteristics of Today's and Tomorrow's Schools

Schools of Today	Schools of Tomorrow
Strategy	
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Learning Environment	
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Management	
• Supervision by administration	• Learner-centered, teacher directed
Outcome	
• Only some students learn to think	• All students learn to think

Collaborative Worksheet

1. List some ways that collaboration has been used in this workshop thus far:

2. Cite ways that collaboration is presently being using in adult education classrooms:

3. Recall incidents where collaboration was a "key" to success in your own lives. (You will be asked to select one incident to report):

Collaborative Task Observation Form

Group _____

Directions: The observer should complete the following tasks:

1. Record the total time spent in PLANNING. (Some planning time may be at the outset—other planning time may be the result of having to re-group.)

   _____

2. Record the total time spent in performing the task: (e.g. actual time when construction or the solution is taking place.)

   _____

3. Please answer the following questions:

   Did ONE leader emerge who directed or elicited solutions?

   YES____ NO____

   Was there an individual who attempted to control the group process?

   YES____ NO____

   Did the group work as a cohesive team with ALL members participating?

   YES____ NO____

4. Make any additional comments you would like about the team's collaborative process, roles assumed, or other observations.

   _____

   _____

   _____

   _____

   _____

   _____

Collaborative Construction Task

Your group's collaborative task is to construct the tallest possible FREE-STANDING tower. Only the materials provided can be used. (Adding extraneous materials such as tape or other objects will disqualify your group's project.)

The product is expected to be a collaborative team effort! You will have 15 minutes total to complete your group task. You may divide your time any way you wish between PLANNING AND BUILDING.

An observer will report on your team's efforts. The materials in your packet are:

Five 5x8 cards

Five 3x5 cards

Ten paper clips

Collaborative Logical Thinking Task

The CEO of a large manufacturing company called a team meeting of his 5 top managers. The names of the CEO and the 5 managers who sat down at the circular table were: Mr. Airhead, Ms. Alliance, Mr. Hussel, Mr. Dupont, Ms. Antrophy, and Mr. Fish. One of them was deaf, one was very talkative, one was a snob, one simply hated Mr. Dupont, one had a vitamin deficiency, and one was the CEO. The following information is available:

- The person who hated Mr. Dupont sat directly opposite from Ms. Alliance.
- The deaf person sat opposite Mr. Hussel, who sat between the person who had a vitamin deficiency and the person who hated Mr. Dupont.
- The person who had a vitamin deficiency sat between Mr. Hussel and the person who sat opposite from the woman who hated Mr. Dupont.
- Mr. Fish, who was a good friend of everyone, sat next to the snob and opposite the CEO.

As a collaborative team, identify in 15 minutes each of the team members using the following list:

Fill in the number of the correct person for each characteristic.

1. Mr. Airhead _____ Deaf
2. Ms. Alliance _____ Talkative
3. Mr. Hussel _____ Snob
4. Mr. Dupont _____ Hated Mr. Dupont
5. Ms. Anthrophy _____ Vitamin Deficiency
6. Mr. Fish _____ CEO

Project-Based Instruction

Project-based instruction is a student-centered, multi-modality, active learning approach to education. Through this approach, students are encouraged to generate projects and work collaboratively as team members to complete a series of tasks resulting in a finished product. Project-based instruction is an excellent vehicle for teaching the SCANS skills because they can be taught in contextual situations. Skills and academics are not isolated from one another—instead they act as reinforcement to one another. This combined approach can also help students become familiar with how they learn and how that awareness benefits them in a work setting.

An important advantage of project-based instruction is that the process can help students who learn differently. They are afforded many more opportunities and avenues to demonstrate knowledge and develop skills. The time required for each project will vary but must be of sufficient duration to allow for completion of the project and its sub-tasks including instructional interventions on needed basic skills, personal qualities (such as presenting oneself positively) and evaluation strategies.

The SCANS skills combine the two fundamental areas of workplace competencies and basic skills which can be incorporated into any adult curriculum. The SCANS skills project-based approach can be used on a limited or periodic basis to enhance a traditional curriculum or used as a more intensive approach so that the primary focus of the class is to achieve proficiency in the SCANS skills themselves.

In project-based instruction, the learners are actively involved in the learning process. They actually are doing activities which require the application of basic skills and problem-solving strategies. Unlike some team teaching which involves only one activity or topic at a time, project-based instruction involves the layering of many skills and content areas. Such a multi-faceted approach to education deepens students' understanding and increases the likelihood of their retaining what is learned as they develop critical thinking skills. Examples of projects included in project-based instruction could be establishing a network for cooperative daycare, planning a graduation ceremony, or creating a business from the ground up—all stages of which are researched, coordinated, and executed by the learners themselves.

The multi-dimensional approach to learning provided by project-based instruction enables learners to become more aware of the learning process. The instructor does not assign the learning tasks of each team member, but guides the learners by helping them reflect on what they are learning and the process they are following to accomplish their tasks. The responsibility for learning is thus shifted from the instructor to the learner. *Taking responsibility for one's own learning and acquiring the skills to function within a group are strong predictors of workplace success.*

In addition, project-based instruction continually works to address, refine, and individualize a student's learning style. Paradoxically, although collaborative in nature, this instructional approach demands more active use of learner's individual, unique experiences, personality, and thinking. The adult learner is not viewed as a blank circuit board needing to be

wired, as one might view a child who has few reference points or little previous knowledge. Using a project-based approach requires active participation and allows learners to make sense of things using their own ideas, connections, interests, and experiences. It creates in the students an understanding of how they are smart, not how smart they are.

To be a successful team, each learner's unique contribution is valued; these individual contributions are crucial to the success of the team. "Hitchhiking," which often occurs with some learners who do "group work," is reduced due to the different group roles students are assigned or choose. Also, to successfully complete a project-based activity requires collaboration by team members and consequently, more individual accountability.

Including SCANS skills in project-based instruction helps adult students prepare for jobs. Considering the new demands for public assistance clients to enter the workforce, for job-readiness skills in WIA-promoted one-stop centers and in other workforce initiatives, SCANS-related instruction becomes more critical. Our response as adult educators to these new priorities is to help learners become self-directed, lifelong learners who will be successfully employed and able to advance in their chosen fields.

Steps of Project-Based Instruction

1. Identifying a problem or issue
2. Carrying out a preliminary investigation
3. Planning and assigning tasks
4. Providing instruction to enable learners to carry out the research and activities
5. Researching the topic
6. Implementing the project
7. Developing and drafting a final product
8. Assessing and evaluating the process and product
9. Disseminating the results

Examples of Team Functions by Team Members

1. Participates as a team member:
   - Helps others
   - Respects diversity (doesn't put down)
   - Expresses ideas clearly and asks for clarification when doesn't understand
   - Accepts team responsibilities
   - Gives and accepts constructive feedback

2. Exercises leadership:
   - Restates and summarizes to keep discussion on track
   - Suggests approaches
   - Helps delegate tasks
   - Suggests organizational structures and roles

3. Negotiates to arrive at decisions:
   - Makes his/her position clear without being authoritative
   - Is willing to compromise for the good of the whole
   - Offers alternatives when decisions are difficult
   - Suggests criteria for decisions and solutions to barriers

SCANS Project-Based Scenario

Maria is a student in Sheila's High Beginning ESL class. One day during break, Sheila notices Maria in tears and speaking animatedly to her closest friend. Sheila asks Maria if she can help. Maria relates that she is about to lose her job and probably will have to drop-out of class. She has been late to work so often that her supervisor says the next time he will have to let her go.

Other women, who are class members, join in, saying this is a common problem for families with children and only one car or no car. Maria's husband uses the car because he leaves for work early, leaving Maria to get the children up and ready for school and then take the bus to work herself. Sometimes she misses the bus and sometimes the bus is running late. Both make her late for work.

Since it is a rather common problem, Sheila asks Maria if the class can talk about her dilemma. Maria welcomes the opportunity. There is a lot of animated discussion but with much difficulty in finding the right words to express the frustration and stress they are under. They see no solution.

Sheila tells them that many heads are better than one and suggests they take a systematic approach to solving the problem. Because the class is large, she suggests that small groups will be a better way for everyone to participate. Her one caveat is that they must speak English in their teams, because team-members come from several countries with different languages. Teams are formed. One will interview employers to see what suggestions they would have. A second team explores neighbors helping one another in getting children off to school and providing for them after school. A third team looks into alternate means of transportation either for husbands or wives.

Each team picks a leader, a recorder and a spokesperson. Sheila sits in with each team to help them organize. She makes notes on needed basic skills, problem-solving skills, and competencies. Some teams role-play interviews, others practice telephone dialogues, reading bus schedules, leadership skills for keeping groups on task, and writing skills for recording agreements, making lists and the like. Sheila plans whole-group lessons around skills that teams are having difficulty with, but allows time from every class for teams to meet, to discuss problems and progress. She notes that attendance is better during this project because students don't want to let their teammates down.

Several positive results emerged. Some employers were willing to adopt flex-time schedules to allow mothers to come in later in the morning and work later in the afternoon. Some fathers agreed to give up the after-work beers with their buddies to pick up or watch out for neighborhood kids. Some women who weren't working let children play in their yards after school or put neighbor's kids on school busses in the morning so parents could leave for work earlier, if there was no flextime. One unemployed man with a recreation vehicle agreed to drop people at their work places for the same bus fare to pay for gas -- and a little spending money.

Students took extra care with their weekly logs (recording what had happened) and with their final reports and class presentations. Not all of the work scheduling problems were solved, but students were pleased that they had brought about positive changes in their lives at home and at work. Maria kept her job, continued coming to class, and talked her husband into coming one night a week when she would be at home.

Scenario Task

On the blank chart provided, (H-15) cite specific examples from the Scenario for as many of the SCANS competencies, foundation skills and personal qualities as you can.

Examples of the SCANS Competencies, Skills and Personal Qualities from the Scenario

Competencies	Examples From Scenario:
1. Resources: time, money, materials, etc.	
2. Interpersonal: working well with others	
3. Information: acquires and uses	
4. Systems: complex inter-relationships e.g. monitors/corrects performance	
5. Technology: works with variety of technologies	
Foundation Skills	**Examples from Scenario:**
1. Basic Skills: reading, writing, math, listening, speaking	
2. Thinking Skills: creativity, decision making, problem-solving, intuition, how to learn, reasoning	
3. Personal Qualities: responsibility, self-esteem, sociability, self-management, integrity	

Project-Based Team Roles

Coordinator: Makes sure team members keep in touch, are on-task and on time.

Resource Manager: Assumes the responsibility for making sure resources are secured or developed.

Recorder: Keeps a record of team plans; prepares a final copy of the lesson during Session 2 to be presented as a handout or on a transparency.

Presenter: Makes the final presentation of the SCANS-related, project based lesson to the workshop participants.

* * * * * *

(Note: Ideally, roles are assumed by different team members; however, in some instances, more than one role can be assumed by the same person.)

Team Members: _____

Instructional Topic: _____

Note: Please place a (Y) before each step completed during Session 1.

Steps In Designing and Implementing A Project-Based Sequence

(Note: The SCANS-related project-based scenario (H-14) provides an additional example of the following sequence.)

(Y)

___ Step 1 *Identifying a problem or issue:* Instructor and/or learners identify a broad area of need.

> For example, community resources for child care, safety of students getting to and from adult evening classes or, in this instance, designing a project-based instructional sequence.

___ Step 2 *Carrying out preliminary investigations:* Learners discuss the parameters of the need. Teams are formed around different projects or different components of a larger project.

> For example, in the instance of student safety, one team might explore safety while waiting for busses; another might consider getting from various bus stops to homes; safety on night time busses, etc. Class discusses potential approaches to solving problems.
>
> In the instance of a project-based instructional plan, each team decides on its own topic, instructional strategies, and evaluation devices.

___ Step 3 *Planning and assigning tasks.* Teams choose or assign necessary roles to insure successful completion of their tasks. Roles may vary according to the needs of each project. Generally, however, there will be a need for such roles as: a team coordinator, a recorder, a resource facilitator, and various information gatherers. They must monitor the team's progress (on-time and on-task), decide what the product (or procedure) will look like, and be able to evaluate its success.

For example, the safety teams would each need to prepare some type of report based on research, interviews, phone calls and the like. The instructor would need to schedule reports and the class evaluate whether suggested safety solutions would work.

In the case of the lesson sequence, the plan is the product; devices for its evaluation need to be established.

(Y)

___ Step 4 *Providing instruction to enable learners to carry-out the research and activities:* The instructor guides and assists learners in identifying and achieving necessary SCANS competencies, foundation skills, and personal qualities as needed.

For example, to complete the safety project, letters may need to be written, schedules established, phone calls planned, interviews scheduled, and a report planned. All require not only the basic skills of reading, writing, speaking and listening, but thinking skills, abilities to present self confidently and the like. The instructor needs to intervene with appropriate individual instruction , small group instruction or whole-class lessons, as needed.

For the lesson sequence, this workshop series is designed to provide necessary instruction for teachers, including planning of the lesson project.

___ Step 5 *Researching the topic:* Each member of the team will have an assigned research function which may include, for example, locating specific information, materials, or carrying out interviews.

For the safety project, the research activities planned in Step 4, need to be carried-out: Phone calls, interviews, data gathered, resources located, and so on.

In planning a SCANS/project-based lesson, the activities need to be detailed, content resources located, and materials developed, as needed.

___ Step 6 *Implementing the project:* Once the information, materials and other resources are gathered and organized, the project can be implemented.

For the safety project, students would try out the various devices: traveling in pairs or groups, sharing rides, getting transportation companies to provide safety measures, etc.

For the lesson project, instructors would try out the lesson in their classrooms.

___ Step 7 *Developing and drafting a final product:* It is important to draft a written product or make a preliminary mock-up of a physical product before making final evaluations.

Students would write a draft of the safety project so that students in other classes might use it.

Instructors, likewise, might prepare the draft of a presentation for other instructors as part of their professional development sequence.

(Y)

Step 8 *Assessing and evaluating the process and product:* Whereas assessment of the process and product is ongoing (in planning stages, in monitoring progress, and, finally, in evaluating the results) as now, it is often detailed near the close of the project and is certainly an integral part of Step 7.

During planning, learners would make plans for checking on the success of various safety plans. Some may need to be dropped along the way as monitoring devices show their lack of success. At the end, however, as the product is developed, all of the successes and failures need to be studied in an overall way so that a summation can be made of the most-to-least effective.

This process will enable other students to choose the most successful devices or to modify those less successful.

The same basic procedure applies to the lesson: Planning for assessment and evaluation, monitoring progress, and summarizing the successes and problems of the project, as implemented.

Step 9 *Disseminating the results:* Step 8, evaluation, usually determines whether or not the product warrants dissemination. If it does, decisions need to be made about the reasons for its dissemination, the audiences needing the information and the procedures for dissemination (presentations, product distribution, flyers, etc.) Likewise, available funds, time, and effort must be factored into dissemination decisions.

As suggested earlier, if safety devices are successful, students may want to disseminate the results. Such dissemination could, in fact, become another project-based lesson: Convincing school administration that funding would increase enrollment; seeking broader assistance from transportation sources to establish new routes; and the like.

Likewise, instructors in the original project may want to take their successful project "on the road" or to publish articles, an instructional packet, or provide community-based adaptations for involving adults in non-school community activities.

Clearly, project-based instruction, as a successful venture, requires new ways of looking at instructor-student roles. It is one that requires different instructional (facilitation) skills, but the results are far-reaching in helping adult learners to assume an active role in the learning process and to be successful in the workplace and in their communities.

Lesson Topic: _____
Target Audience: _____
(Class) (Level)

Lesson Plan Project Form

Lesson Stages	Project-Based Activities	Resources Needed	Foundation Skills: Basic/Thinking/ Personal Qualities	SCANS Competencies [1]Key: 1, 2, 3, 4, 5	Evaluation Devices
Warm-up/Review (5-10 min) An activity that: • Uses previously learned content to begin a new lesson • Lasts 5-10 minutes • Uses materials students are familiar with from previous lessons.					
Introduction of Lesson • Focuses student attention on the lesson (asking questions, using visuals) • States the objective • Relates the objective to previous learning					

[1]Key: 1=Resources 2=Interpersonal skills 3=Information 4=Systems 5=Technology

Lesson Topic: _____

Target Audience: _____
(Class) (Level)

Lesson Stages	Project-Based Activities	Resources Needed	Foundation Skills: Basic/Thinking/ Personal Qualities	SCANS Competencies [1]Key: 1, 2, 3, 4, 5	Evaluation Devices
Presentation • Introduces new information by a variety of strategies: visuals, realia, description, explanation, or written text • Checks for student comprehension					
Guided Practice • Provides opportunities to practice new knowledge/skills • Guides learners through materials. • Includes whole group, small group, pairs or individual activities. • Models each activity, monitors progress and provides feedback.					

[1]Key: 1=Resources 2=Interpersonal skills 3=Information 4=Systems 5=Technology

Lesson Topic: _____

Target Audience: _____
(Class) (Level)

Lesson Stages	Project-Based Activities	Resources Needed	Foundation Skills: Basic/Thinking/ Personal Qualities	SCANS Competencies [1]Key: 1, 2, 3, 4, 5	Evaluation Devices
Evaluation • Evaluates each student on attainment of lesson objectives. • Evaluates by oral, written, or demonstrated performance.					
Application • Requires students to apply new knowledge to their own lives or a new situation.					

[1]Key: 1=Resources 2=Interpersonal skills 3=Information 4=Systems 5=Technology

H-18 c

Summary of Lesson Taught

Successes: (e.g., Positive comments from students, observed student involvement, quality of student work, etc.)

Problems: (e.g., Too difficult, insufficient time, lack of interest, inappropriate or insufficient resources, etc.)

Recommendations for Altering or Adapting the Lesson: (e.g., reorganizing, omitting portions, altering difficulty levels, using with other students, etc.)

Transparency Masters For Session 1

Session 1: Objectives

By the end of this session, participants will be able to:

1. Identify SCANS competencies, foundation skills, and personal qualities
2. Plan and participate in collaborative activities
3. Identify the characteristics of project-based instruction and learning
4. Integrate SCANS-related content, collaborative activities, and project-based instruction into a lesson plan

Session 1: Agenda

I. Introduction, Objectives, Agenda

II. Overview and Implications of the SCANS Reports

III. The Need for Workplace Collaboration in the 21st Century

IV. Project-Based Instruction as a Vehicle for Learning and Practicing Collaborative SCANS Skills

V. Interim Project-Based Task for Participants

VI. Wrap-up of Session 1

SCANS Publications

SCANS

Secretary's Commission on Achieving Necessary Skills

Two Reports Published By:
U.S. Department of Labor

1. ***Learning A Living: What Work Requires of Schools (June 1991)***

2. ***Learning a Living: A Blueprint for High Performance (July 1992)***

The Two Most Common Goals of Adult Education Students

1. To get a job, better job or promotion, and

2. To improve basic skills

T-D

Characteristics of Today's and Tomorrow's Schools

Schools of Today	Schools of Tomorrow
Strategy	
• Focus on development of basic skills • Testing separate from teaching	• Focus on development of thinking skills • Assessment integral to teaching
Learning Environment	
• Recitation and recall from short-term memory • Students work as individuals • Hierarchically sequenced—basics before higher order	• Students actively construct knowledge for themselves • Cooperative problem solving • Skills learned in context of real problems
Management	
• Supervision by administration	• Learner-centered, teacher directed
Outcome	
• Only some students learn to think	• All students learn to think

SCANS Competency #2:
Interpersonal—WORKS WITH OTHERS

(e.g.)

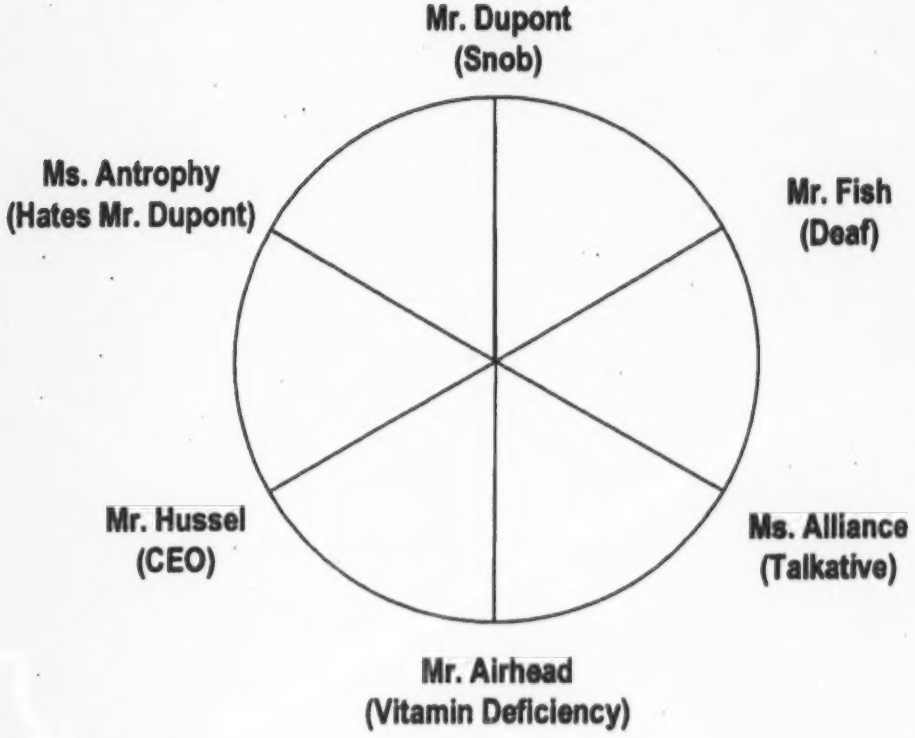
- **Participates as a Member of a Team**
  (Contributes to group effort)

- **Negotiates**
  (Works towards agreements; exchanges resources; resolves divergent interests)

- **Works with Diversity**
  (Works well with men and women from diverse backgrounds)

T-F

Solution for Logical Thinking Collaborative Task



Solution:

1.	Mr. Airhead	6	Deaf
2.	Ms. Alliance	2	Talkative
3.	Mr. Hussel	4	Snob
4.	Mr. Dupont	5	Hated Mr. Dupont
5.	Ms. Anthropy	1	Vitamin Deficiency
6.	Mr. Fish	3	CEO

T-G

Steps of Project-Based Instruction

1. Identifying a problem or issue
2. Carrying out a preliminary investigation
3. Planning and assigning tasks
4. Providing instruction to enable learners to carry out the research and activities
5. Researching the topic
6. Implementing the project
7. Developing and drafting a final product
8. Assessing and evaluating the process and product
9. Disseminating the results

Project-Based Team Roles

Coordinator: Makes sure team members keep in touch, are on-task and on time.

Resource Manager: Assumes the responsibility for making sure resources are secured or developed.

Recorder: Keeps a record of team plans; prepares a final copy of the lesson during Session 2 to be presented as a handout or on a transparency.

Presenter: Makes the final presentation of the SCANS-related, project-based lesson to the workshop participants.

Lesson Plan Project Form

Lesson Stages	Project-Based Activities	Resources Needed	Foundation Skills: Basic/Thinking/ Personal Qualities	SCANS Competencies	Evaluation Devices
Warm-up/Review					
Introduction of Lesson					

Lesson Stages	Project-Based Activities	Resources Needed	Foundation Skills: Basic/Thinking/ Personal Qualities	SCANS Competencies	Evaluation Devices
Presentation					
Guided Practice					

Lesson Stages	Project-Based Activities	Resources Needed	Foundation Skills: Basic/Thinking/ Personal Qualities	SCANS Competencies	Evaluation Devices
Evaluation					
Application					

Summary of Lesson Taught

Successes

Problems

Recommendations for Altering or Adapting the Lesson

SCANS-Related, Project-Based Instruction and Learning In Adult Education

Session 2

Contents for Session 2

	Page
Contents for Session 2	i
Handout Masters for Session 2	ii
Transparency Masters for Session 2	ii
Appendices	ii
Overview: SCANS-Related Professional Development: Session 2	iii
Objectives: By the end of this session, participants will be able to:	iii
Time Requirements:	iii
Materials Checklist:	iii
Preparation Checklist:	iii
Outline for Session 2	iv
Preparation for Session 2	v
Facilitator's Notes: Session 2	1
I. Overview of Session 2, Including Objectives and Agenda	1
II. Assessment and Evaluation of SCANS-Related, Project-Based Instruction and Learning	1
III. Team Completion of Lesson Plans and Planning for the Presentation	4
IV. Presentation of Projects to the Whole Workshop Group	5
V. Brainstorming Uses of SCANS-Related, Project-Based Lessons	5
VI. Wrap-up of Session 2	6

Handout Masters for Session 2

H-1	Objectives
H-2	Agenda
H-3	Critical Thinking Rubric
H-4	Math Pathways™ Problem-Solving Assessment Rubric
H-5a-c	SCANS-Related Rubric

Transparency Masters for Session 2

T-A	Objectives
T-B	Agenda
T-C	Critical Thinking Rubric
T-D	Math Pathways™ Problem-Solving Assessment Rubric

Appendices

A	Needs Assessment Questionnaire
B	SCANS-Related, Project-Based Instruction and Learning Evaluation of Workshop Series (If Appendix A, Needs Assessment, was used in Session I)
C	SCANS Five Competencies and Three Part Foundation
D	References

Overview: SCANS-Related Professional Development: Session 2

Objectives: By the end of this session, participants will be able to:

1. Complete the objectives begun in Session 1:
   - Identify SCANS competencies, foundation skills, and personal qualities
   - Plan and participate in collaborative activities
   - Identify the characteristics of project-based instruction
   - Integrate SCANS-related content, collaborative activities, and project-based instruction into a lesson plan.
2. Incorporate effective assessment throughout a SCANS-related project
3. Present project results from each team to all workshop participants
4. Begin planning for the incorporation into future curriculum of SCANS-related and/or project-based instruction.

Time Requirements:[1]

Total time required for Session 2 is approximately 3½ hours

Materials Checklist: Y

Hardware: Overhead projector, screen and flip-chart stand (if used)

Software:
___ Session 2 Handouts
___ Session 2 Transparencies
___ Blank transparencies and transparency pens
___ Flip charts, pens, masking tape, and name tags

Preparation Checklist: Y

___ Duplicate handouts and prepare transparencies
___ Check equipment to be sure it is working properly
___ Set-up the room(s) where training activities will take place[2]

---

[1]Regarding suggested times: All times are the result of field-testing. Agencies should feel free to adjust the suggested times to meet the needs and experience levels of the participants. In addition, it is important to be familiar with the materials prior to the workshop in order to select specific activities to present or delete if sufficient time is not available or some activities take longer than anticipated. Familiarity with the materials also will enable presenters to personalize the materials by adding anecdotes when appropriate.

[2]Regarding room set-up: Training activities include both large and small groups. Therefore, the room should be arranged so participants can move about easily. Try to make certain that all participants can see flip charts, overheads, or videos.

Outline for Session 2

Materials	Activities	Estimated Time
H-1; H-2 T-A; T-B	I. Overview of Session 2, Including Objectives and Agenda	15 minutes
H-3; H-4; H-5a,b,c; T-C; T-D	II. Assessment and Evaluation of SCANS-Related, Project-Based Instruction and Learning	65 minutes
	Break	10 minutes
Presentation Materials	III. Team Completion of Lesson Plans and Planning for the Presentation	45 minutes
Presentation Materials	IV. Presentation of Projects to the Whole Workshop Group	75 minutes
Flip-Charts or Blank Transparencies	V. Brainstorming Uses of SCANS-Related, Project-Based Lessons	20 minutes
Appendix "B"	VI. Wrap-up of Session 2	20 minutes
	Total Time Required	4 hours 10 minutes

- **Preparation for Session 2**

  # Send out flyers announcing Session 2 of the professional development series. Stress that participants are expected to attend both sessions and participate in an interim activity between sessions.

  # Run-off handouts from Handout Masters (H-1 through H-5).

  # Make transparencies from Transparency Masters (T-A through T-D).

  # Order all equipment (e.g. overhead projector, screen, and flip-chart stands) and make sure they are operating correctly. Also check screen for size and clarity of print from a distance.

  # Have available such materials as flip charts, pens, masking tape, blank transparencies, and name tags.

  # Arrange for a place to hold Session 2 and make sure the location has sufficient space and movable chairs for breakout activities. Consider which room arrangement style will best suit communication and activities.

  # Arrange for participant parking, if necessary, and for any refreshments that will be made available.

  # Review the SCANS-Related Professional Development Packet including all handout and transparency masters. Give special attention to the Facilitator's Notes for Session 2.

Facilitator's Notes: Session 2

		Time
	I. Overview of Session 2, Including Objectives and Agenda	15 minutes
	A. Welcome Back	5 minutes
	Welcome participants back to Session 2. Tell them you hope they had an enjoyable and profitable experience in developing their SCANS-related, project-based lesson plan.	
	Express the excitement and anticipation that everyone feels for adding a variety of new lesson plans to their existing repertoires.	
	B. Objectives	5 minutes
H-1; T-A	Show T-A (Objectives) (H-1) and briefly review the total workshop objectives with *focus on the new objectives for Session 2.*	
	C. Agenda	5 minutes
H-2;T-B	Follow the objectives with today's agenda (T-B)(H-2) so participants will understand the sequence and time allotments.	
	Ask if there is any clarification needed or questions to be answered.	
	II. Assessment and Evaluation of SCANS-Related, Project-Based Instruction and Learning	65 minutes
	A. Assessment of Learning (Presentation)	20 minutes
	Ask for a show of hands of those who have already incorporated some kind of assessment into their lesson plans. If there are some, compliment them on their farsightedness.	
	Explain that because the SCANS recommendations include 3 kinds of measures: competencies, skills (basic and thinking), and personal qualities—more than one kind of assessment is necessary. For example, basic skills assessment is the most familiar to instructors and one often measured by some kind of standardized instrument such as the Test of Adult Basic Education (known most commonly as the TABE) or by the CASAS tests. In addition to standardized measures used primarily for accountability and/or level achievement, most instructors use a number of instructor-made or workbook-type assessments to measure short-term achievement. In a sense,	

these tests measure competence in basic skills, such as grammar, math, reading and writing (and to a lesser extent listening and speaking—except in ESL programs which may *focus* on listening and speaking).

- Competency-Based Assessment
  When the term *competency-based assessment* is used, however, it generally refers to a broader-based assessment that requires the use of basic skills, thinking skills (such as problem-solving and decision-making requiring judgement in real-life situations) and performance skills. In addition, competency-based assessment assumes the identification of a specific competency and some level of accomplishment. The SCANS competencies are no exception. They require organizational abilities, the ability to work collaboratively, and to understand how one learns best, for example.

- Performance-Based Assessment
  Performance-based assessments measure achievement of some actual task, such as accurately completing an application form, following instructions for a construction project, writing a workplace memo, balancing a checking account, making wise choices among real-life alternatives, and the like.

  In performance-based assessment, learners use basic skills, but in the context of real-life tasks. There is still a place for basic skills assessments, such as math computations, writing complete sentences, and reading isolated passages—but these become most useful when they can be applied to everyday life situations.

  Finally, there are the SCANS personal qualities—often these are the most crucial to getting and keeping a job—but also the most difficult to teach and assess. These qualities include such personal attributes as task persistence, having confidence in one's own abilities, assuming responsibility, and so on.

  Project-based instruction and learning, as we learned in Session 1, present an opportunity for learners to use the SCANS competencies, skills, and personal qualities in real situations that are of importance to learners. But how can we best assess SCANS achievement in project-based learning?

Minutes

Since the "project" represents performance by learners, it is both logical and pretty much agreed upon that performance-based assessments are most appropriate. The question then becomes: How can we assess such a broad array of competencies, skills, and personal qualities in a single project? No single project, of course, will encompass all of the SCANS skills, competencies, and personal qualities; but they can include a surprising number, as seen in Session 1's Scenario.

➢ Criteria + Standards = Rubrics

One way to assess performance is to establish some kind of criteria and standards by which to judge performance achievement. Such criteria and standards are often referred to as *rubrics*. For example, the GED test uses a rubric to assess how well test takers do in their writing assignment.

Such rubrics also make it easier to achieve inter-rater reliability when assessments are made by more than one person on the same writing assignment.

H-3; T-C

What might a project-based rubric look like? Look first at a very simple rubric on critical thinking. (H-3) (T-C). A more complex rubric can be seen in the Math Pathways™

H-4; T-D

Problem-solving Assessment Rubric (H-4) (T-D). Note again that the criteria are down the side and the standards across the top.

H-5a,b,c

Finally, H-5 presents a possible rubric with SCANS criteria on the side and workplace-related standards across the top. The standards are based on a 6-point continuum of work readiness. The far right column allows space for a brief statement of "evidence" to support the rating. On any given project, related criteria could be selected and placed on a new grid or simply highlighted on the more encompassing grid.

B. Incorporating Assessment Throughout the Interim Assignment Lessons (Activity) — 45 minutes

Have participants sit at tables with their team members. Tell participants that the first tasks for them today are to consider:

1. The design for the rubric for their project lesson;
2. The SCANS skills they will assess;
3. Other assessments they might want to use; and
4. How these assessments can be incorporated throughout the

project to serve as pre-assessment, monitoring of progress, and as post-assessment.

Inform participants they will have a half-hour to address these 4 tasks.

After 30 minutes, ask participants to give some examples of how they have planned assessment. Explain that not all teams have to report at this time, because they will have an opportunity to describe their assessments during the formal presentation later in the day. Elicit ideas. In the interest of time, it is not necessary to record these on flip charts or overhead transparencies. (Allow a total of about 10-15 minutes for this report.)

III. Team Completion of Lesson Plans and Planning for the Presentation

45 minutes

Inform participants they have 45 minutes for the following activity.

Note: Explain that you realize teams will be in various stages of lesson-plan completion based on the interim time available, ability to meet or confer by phone or on-line, and the choice of lesson topic. Nonetheless, because the workshop time is limited, a finite time has been allotted for teamwork.

Because of the varied stages, two tasks are included in this time allotment:

1. Completion of the lesson, or revisions (if the lesson was presented in the interim), including provisions for assessment, and
2. Planning a presentation for all workshop participants.

Note: Teams may want to consider if their best use of time is to work as a whole team or to sub-divide tasks and then incorporate them into the whole.

Explain that blank overhead transparencies and a limited number of transparency pens are available. Remind participants they were invited to bring their own pens, flip charts or other presentation materials.

Ask if there are questions that would be of help to the whole group—otherwise, the facilitator(s) will speak with teams on an individual basis.

If the lesson plan was actually tried, the results, observations, and what would be done differently should be included in the

team's presentation.

Informally monitor progress but do not interrupt the flow of teamwork by bringing extraneous issues to teams.

After 35 minutes, remind teams that they have 10 minutes remaining.

IV. Presentation of Projects to the Whole Workshop Group

75 minutes

Call teams together and ask for volunteer teams who want to present first. The time allowed for each presentation will depend on the time available and the number of teams. It is strongly suggested, however, that 20 minutes be the maximum amount of time allotted to each team and that 1 hour to 1¼ hours be the maximum amount of time allocated for all presentations. Otherwise they can become very tedious with too much detail.

Note: Be sure that teams know the maximum amount of time available when they are *planning* their presentations!

Also decide in advance whether it will be possible to make lesson plans (without supplementary materials) available to all participants. This would involve duplicating and disseminating all team lessons.

Another way to disseminate is to allow sign-ups for individual lesson plans that can be distributed by a central office or by the lesson designers after the session.

Finally, lessons could be put on-line after the session, if staff and time (or volunteers) are available to accomplish that task.

V. Brainstorming Uses of SCANS-Related, Project-Based Lessons

20 minutes

Now that all lessons have been presented, praise participants as a whole for their creative and thoughtful projects.

Announce whatever dissemination of the plans will be made, if any.

Tell participants you would like to brainstorm for about 10 minutes, ways they see SCANS-related, project-based lessons fitting into their curriculum.

Flip-chart or blank

List suggestions on a flip chart or overhead transparency.

At the conclusion of the brainstorming, facilitators may want to

transparency add some of the suggestions from the following box:

Suggestions for Using SCANS Related Project-Based Learning
Exploring issues of: ➢ Keeping a job ➢ Getting promoted or getting a better job ➢ Working with others (e.g., the workplace, community, family) ➢ Managing resources such as time or money ➢ Gathering and organizing information for a special project

VI. Wrap-up of Session 2

20 minutes

Again, thank participants for their energy, creativity, and productivity. Wish them well in their SCANS-related, project-based endeavors.

Tell them you would like them to complete a brief evaluation of the workshop series (2 sessions and interim activity). Evaluation is, of course, optional. Facilitators may want to use the form included in Appendix B, which is a variation of the Needs Assessment found in Appendix A. Or they may wish to use their own evaluation forms.

The advantage of the Appendix B form, if the Needs Assessment is also used, is that it is easy to tally the differences in responses from pre-workshops to post-workshops.

End of Session 2

Handout Masters For Session 2

Session 2 Objectives

By the end of session 2, participants will be able to:

1. Complete the objectives begun in Session 1:
   - Identify SCANS competencies, foundation skills, and personal qualities
   - Plan and participate in collaborative activities
   - Identify the characteristics of project-based instruction
   - Integrate SCANS-related content, collaborative activities, and project-based instruction into a lesson plan
2. Incorporate effective assessment throughout a SCANS-related project
3. Present project results from each team to all workshop participants
4. Begin planning for the incorporation into future curriculum SCANS-related and/or project-based instruction

Session 2 Agenda

I. Overview of Session 2, Including Objectives and Agenda

II. Assessment and Evaluation of SCANS-Related, Project-Based Instruction and Learning

- Assessment of Learning
- Incorporating Assessment Throughout the Lesson

III. Team Completion of Lesson Plans and Planning for the Presentation

IV. Presentation of Projects to the Whole Workshop Group

V. Brainstorming Uses of SCANS-Related, Project-Based Lessons

VI. Wrap-up of Session 2

Critical Thinking Rubric

Criteria	Standards			
	Always	Often	Sometimes	Not Yet
1. Seeks clarity and precision when information is unclear				
2. Seeks reasons for what one believes				
3. Takes into account the total situation				
4. Analyzes information carefully				
5. Remains open-minded				
6. Takes a position when the evidence is sufficient to do so				
7. Shows sensitivity to the feelings, level of knowledge, and degree of sophistication of others				

Math Pathways™ Problem-Solving Assessment Rubric

	Novice	Apprentice	Practitioner	Expert
Understanding	• Student makes an effort to solve the problem. • May use math concepts not related to solving the problem. • Solution does not make sense for the problem.	• Solution is not complete although evidence shows that problem is partially understood. • Uses some math concepts related to solving the problem. • Solutions make some sense to problem.	• The solution shows that the student has a broad understanding of the problem and the major concepts necessary for its solution.	• The solution shows a deep understanding of the problem including the ability to identify the appropriate mathematical concepts and the information necessary for its solution.
Strategies	• If strategy is not appropriate for the problem. • No evidence of strategy.	• Uses a strategy that is partially useful, leading some way toward a solution, but not to a full solution of the problem.	• Uses a strategy that leads to a solution of the problem.	• Uses a very efficient and sophisticated strategy leading directly to a solution.
Computation & Operations	• There were so many computational errors that the problem could not be solved. • Did not make the right choice of mathematical operations.	• Had significant errors in computation. • Chose appropriate mathematical operation but could not complete.	• Accurate computation. • Appropriate operation.	• Accurate computation. • Appropriate operation. • Verification of results.
Reasoning	• Faulty reasoning for problem presented. • No evidence of reasoning.	• Some evidence of mathematical reasoning appropriate to problem.	• Uses effective mathematical reasoning.	• Employs refined and complex reasoning.
Explanation	• There is no explanation of the solution, the explanation cannot be understood or it is unrelated to the problem.	• There is an incomplete explanation, it may not be clearly presented.	• There is a clear explanation.	• There is a clear, effective explanation detailing how the problem is solved. All of the steps are included so that the reader does not need to infer how and why

Math Pathways™ Problem-Solving Assessment Rubric

	Novice	Apprentice	Practitioner	Expert
				decisions are made.
Representation	• There is no use or inappropriate use of mathematical representations (e.g., figures, diagrams, graph, tables, etc.).	• There is some use of appropriate mathematical representation.	• There is appropriate use of accurate mathematical representation.	• Mathematical representation is actively used as a means of communicating ideas related to the solution of the problem.
Terminology	• There is no use, or mostly inappropriate use, of mathematical terminology and notation.	• There is some use of mathematical terminology and notation appropriate to the problem.	• There is effective use of mathematical terminology and notation.	• There is a precise and appropriate use of mathematical terminology and notation.

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SCANS-Related Rubric

Job title:_____

Name: _____ Date: _____

Check Item Assessed Here (Y)		Not Work-Ready 1	2	3	4	5	Work Ready 6	Evidence
Basic Skills								
	Reading							
	Writing							
	Arithmetic							
	Listening							
	Speaking							
	Tone							
Thinking Skills								
	Creative Thinking							
	Decision Making							
	Problem Solving							
	Seeing Things Through the Mind's Eye							
	Know How to Learn							
	Knowing How to Learn							
	Reasoning							
Personal Qualities								
	Responsibility							
	Self esteem							
	Social							
	Self Management							
	Integrity/Honesty							
	Uses Feedback							
Personal Traits								
	Appearance							
	Attitude							
	Flexibility							
	Punctuality							
	Accepts Criticism							

Check Item Assessed Here (Y)		Not Work-Ready					Work Ready	Evidence
		1	2	3	4	5	6	
Workplace Techniques								
	Proof Reading							
	Note Taking							
	Scheduling							
	Following Directions							
	Organizing Graphically							
	Working Well With Others							
Resources								
	Allocates Time							
	Allocates Money							
	Allocates Material and Facility Resources							
	Allocates Human Resources							
Information								
	Acquires and Evaluates Information							
	Organizes and Maintains Information							
	Interprets and Communicates Information							
	Uses a Computer to Process Information							
Interpersonal								
	Participates as a Member of Team							
	Teaches Others							
	Serves Clients/Customers							
	Exercises Leadership							
	Negotiates to Arrive at a Decision							
	Works with Cultural Diversity							

Check Item Assessed Here (Y)		Not Work-Ready					Work Ready	Evidence
		1	2	3	4	5	6	
Systems								
	Understands Systems							
	Monitors and Corrects Performance							
	Improves and Designs Systems							
Technology								
	Selects Technology							
	Applies Technology to Task							
	Maintains and Troubleshoots Technology							

Transparency Masters For Session 2

Session 2 Objectives

By the end of session 2, participants will be able to:

1. Complete the objectives begun in Session 1:
   - Identify SCANS competencies, foundation skills, and personal qualities
   - Plan and participate in collaborative activities
   - Identify the characteristics of project-based instruction
   - Integrate SCANS-related content, collaborative activities, and project-based instruction into a lesson plan
2. Incorporate effective assessment throughout a SCANS-related project
3. Present project results from each team to all workshop participants
4. Begin planning for the incorporation into future curriculum SCANS-related and/or project-based instruction

T-A

Session 2 Agenda

I. Overview of Session 2, Including Objectives and Agenda

II. Assessment and Evaluation of SCANS-Related, Project-Based Instruction and Learning

- Assessment of Learning
- Incorporating Assessment Throughout the Lesson

III. Team Completion of Lesson Plans and Planning for the Presentation

IV. Presentation of Projects to the Whole Workshop Group

V. Brainstorming Uses of SCANS-Related, Project-Based Lessons

VI. Wrap-up of Session 2

Critical Thinking Rubric

Criteria	Standards			
	Always	Often	Sometimes	Not Yet
1. Seeks clarity and precision when information is unclear				
2. Seeks reasons for what one believes				
3. Takes into account the total situation				
4. Analyzes information carefully				
5. Remains open-minded				
6. Takes a position when the evidence is sufficient to do so				
7. Shows sensitivity to the feelings, level of knowledge, and degree of sophistication of others				

Math Pathways™ Problem Solving Assessment Rubric

	Novice	Apprentice	Practitioner	Expert
Understanding	• Student makes an effort to solve the problem. • May use math concepts not related to solving the problem. • Solution for the problem does not make sense.	• Solution is not complete although evidence shows that the problem is partially understood. • Uses some math concepts related to solving the problem. • Solutions to the problem make some sense.	• The solution shows that the student has a broad understanding of the problem and the major concepts necessary for its solution.	• The solution shows a deep understanding of the problem including the ability to identify the appropriate mathematical concepts and the information necessary for its solution.
Strategies	• If strategy is not appropriate for the problem. • No evidence of strategy.	• Uses a strategy that is partially useful and leads to a solution, but not to a full solution of the problem.	• Uses a strategy that leads to a solution of the problem.	• Uses a very efficient and sophisticated strategy leading directly to a solution.
Computation & Operations	• There were so many computational errors that the problem could not be solved. • Did not make the right choice of mathematical operations.	• Had significant errors in computation. • Chose appropriate mathematical operation but could not complete.	• Accurate computation. • Appropriate operation.	• Accurate computation. • Appropriate operation. • Verification of results.
Reasoning	• Faulty reasoning for problem presented. • No evidence of reasoning.	• Some evidence of mathematical reasoning appropriate to the problem.	• Uses effective mathematical reasoning.	• Employs refined and complex reasoning.

Math Pathways™ Problem Solving Assessment Rubric

	Novice	Apprentice	Practitioner	Expert
Explanation	• There is no explanation of the solution, the explanation cannot be understood or it is unrelated to the problem.	• There is an incomplete explanation, it may not be clearly presented.	• There is a clear explanation.	• There is a clear, effective explanation detailing how the problem is solved. All of the steps are included so that the reader does not need to infer how and why decisions are made.
Representation	• There is no use or inappropriate use of mathematical representations (e.g., figures, diagrams, graph, tables, etc.).	• There is some use of appropriate mathematical representation.	• There is appropriate use of accurate mathematical representation.	• Mathematical representation is actively used as a means of communicating ideas related to the solution of the problem.
Terminology	• There is no use, or mostly inappropriate use, of mathematical terminology and notation.	• There is some use of mathematical terminology and notation appropriate of the problem.	• There is effective use of mathematical terminology and notation.	• There is a precise and appropriate use of mathematical terminology and notation.

Appendices

Appendix "A"

Needs Assessment Questionnaire

Name: _____ Agency: _____

Your primary position: Instructor_____ Coordinator_____ Administrator____

Full-time_____ Part-time_____ Years teaching in adult education_____

Geographical Location: Rural_____ Suburban_____ Urban_____

Directions: Please circle on the scale to the right, the extent of your knowledge about or experience with the following:

	A lot	Quite a Bit	Little	Not/None
	4	3	2	1
1. How much experience have you had with team-teaching or other collaborative efforts in adult education?	4	3	2	1
Comments: _____				
2. If you have done collaborative work in adult education, how satisfying was it?	4	3	2	1
3. How extensive is your knowledge base about SCANS?	4	3	2	1
4. How well do you like what SCANS is attempting to do?	4	3	2	1
5. How familiar are you with project-based instruction and learning?	4	3	2	1
6. How extensively have you been involved with or studied about performance-based assessment?	4	3	2	1
7. How would you rate your involvement with innovative projects in adult education?	4	3	2	1
8. In your current position, how extensively do you work with small groups or teams?	4	3	2	1
With learners?	4	3	2	1

Appendix A-1

	A lot	Quite a Bit	Little	Not/None
	4	3	2	1
With colleagues?				
9. How capable or willing do you feel your students are in assuming responsibility for completing projects on their own?	4	3	2	1

What are your primary reasons for wanting to attend this workshop series? (Check up to 3 that most apply.)

____ Obtain CEUs

____ Curiosity about SCANS and project-based instruction and learning

____ Increase your repertoire of instructional options

____ Belief that instruction should be more work-related

____ Suggestion that you should attend by _____.

____ Payment for attendance

____ Opportunity to socialize and share with fellow educators

____ Because the workshop location is convenient and comfortable with many amenities.

____ Other: _____

_____

_____

Appendix "B"

SCANS-Related, Project-Based Instruction and Learning

Evaluation of Workshop

Please check your primary role: Instructor _____ Coordinator or Administrator _____

Indicate your geographical location: Rural _____ Suburban _____ Urban_____

For the following questions, please circle the number that best describes your evaluation.

	Extremely	Very Much	Somewhat	Not at All
	4	3	2	1
1. Thinking back on the 3 main reasons you wanted to attend this workshop series, how satisfied are you with the results?	4	3	2	1
2. How satisfying did you find your team's collaborative effort? Reason: _____ _____	4	3	2	1
3. How conversant do you now feel about SCANS?	4	3	2	1
4. To what extent did you increase your understanding of project-based learning/instruction?	4	3	2	1
5. To what extent did you increase your understanding of performance-based assessment, including rubrics?	4	3	2	1
6. To what extent do you agree that performance-based assessment is feasible for adult learners?	4	3	2	1
7. To what degree do you think you will incorporate SCANS-related competencies, skills, and personal qualities into your instruction or program?	4	3	2	1
8. To what extent do you plan to use project-based instruction in your instruction or program?	4	3	2	1
9. How well do you think SCANS-related content fits with project-based instruction/learning?	4	3	2	1
10. How well do you now think SCANS-related, project-based instruction will be accepted by adult learners?	4	3	2	1

	Extremely	Very Much	Somewhat	Not at All
	4	3	2	1
11. On a scale of 1 - 4, how would you rate this workshop series?	4	3	2	1

Comments: _____

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12. Do you have any suggestions for changing this workshop series?

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Appendix "C"

Five Competencies

1. Resources: (Identifies, organizes, plans and allocates resources)
   - A. Time
   - B. Money
   - C. Material and facilities
   - D. Human

2. Interpersonal: (Works with others)
   - A. Participates as member of a team
   - B. Teachers others new skills
   - C. Services clients/customers
   - D. Exercises leadership
   - E. Negotiates
   - F. Works with diversity

3. Information: (Acquires and uses information)
   - A. Acquires and evaluates information
   - B. Organizes and maintains information
   - C. Interprets and communicates information
   - D. Uses computers to process information

4. Systems: (Understands complex inter-relationships)
   - A. Understands systems
   - B. Monitors and corrects performance
   - C. Improves or designs systems

5. Technology: (Works with a variety of technologies)
   - A. Selects technology
   - B. Applies technology to task
   - C. Maintains and troubleshoots equipment

A Three-part Foundation

1. Basic skills:
   - A. Reading
   - B. Writing
   - C. Arithmetic/Mathematics
   - D. Listening
   - E. Speaking

2. Thinking skills:
   - A. Creative thinking
   - B. Decision making
   - C. Problem solving
   - D. Seeing things in the mind's eye
   - E. Knowing how to learn
   - F. Reasoning

3. Personal qualities:
   - A. Responsibility
   - B. Self-esteem
   - C. Sociability
   - D. Self-management
   - E. Integrity/honesty

Appendix "D"

References

The Secretary's Commission on Achieving Necessary Skills, US Department of Labor. (1992). *Learning a living: a blueprint for high performance, a SCANS report for America 2000.* Washington DC: US Government Printing Office.

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Wrigley, Heide S. (1998). Knowledge in action: the promise of project-based learning. *Focus on Basics* [On-line] 2, D. December 1998. Available: http://gseweb.harvard.edu/~ncsall/wrigley.htm